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EXAMINER	
GODBOLD, DOUGLAS	

ART UNIT	PAPER NUMBER
2626	

NOTIFICATION DATE	DELIVERY MODE
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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

usptopatentmail@cantorcolburn.com

Office Action Summary	Application No.	Applicant(s)	
	10/674,131	COMERFORD ET AL.	
	Examiner	Art Unit	
	DOUGLAS C. GODBOLD	2626	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE *3* MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *22 December 2008*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-14,16,18-22 and 26-31* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-14,16,18-22 and 26-31* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

1. This office Action is in response to correspondence filed December 22, 2008 in reference to application 10/674,131. Claims 1-14, 16, 18-22, and 26-31 are pending and have been examined.

Response to Amendment

2. The amendment filed December 22, 2008 has been accepted and considered in this office action. Claims 1 and 27 have been amended, and claims 15 and 17 have been cancelled.

Response to Arguments

3. Applicant's arguments filed December 22, 2008 have been fully considered but they are not persuasive.

4. In regards to applicants arguments, see Remarks 6-7 that the combination of Gordos, Marshall and Rubis does not teach the limitations "wherein the illumination source is periodically energized by a pulse generator having a pulse output, wherein a period of the pulse output and a pulse width of the pulse output are independently controlled to provide current to the illumination source," the examiner respectfully disagrees. Marshall explicitly states that the illumination source may be energized from a pulse emitting source (see column 4 line 56 and 61) but provides no details as to what the pulse emitting source is. Rubis was used to teach a pulse generator with adjustable

features, not a correction circuit. While it is true that the main concept in Rubis is a correction circuit, it has been held that a prior art reference must either be in the field of applicant's endeavor or, if not, then be reasonably pertinent to the particular problem with which the applicant was concerned, in order to be relied upon as a basis for rejection of the claimed invention. See *In re Oetiker*, 977 F.2d 1443, 24 USPQ2d 1443 (Fed. Cir. 1992). In this case, the adjustable pulse circuit of Rubis was used to teach the limitations of independently controlling certain aspects of a pulse signal, not a correction circuit as a whole. Although the reasons for adjusting a pulse signal may be different, the reasons are not claimed in the current application and therefore the interpretation of the limitations to read on Rubis is reasonable.

Claim Rejections - 35 USC § 112

5. The following is a quotation of the second paragraph of 35 U.S.C. 112:

> The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

6. Claim 14 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. Claim 14 requires that the illumination source be lit continuously, however claim 1 requires the illumination source to be lit periodically. As the periodic operation of the illumination source is described in the specification, pages 5 and 6, the source is turned on and off, making the limitations of claim 14 an impossibility. Appropriate correction is required.

Claim Rejections - 35 USC § 103

1. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

2. Claims 1-3, 6, 14, 15, 18, 19, 21, 22, 26, 27, 29, and 31 are rejected under 35 U.S.C. 103(a) as being unpatentable over Gordos (US PAP 2004/0243416) in view of Marshall (US Statutory Invention Registration H1497) and further in view of Rubis (US Patent 3,771,038).

3. Consider claim 1, Gordos teaches an apparatus for imaging the mouth of a user while detecting the speech of the user (figures 1&2) comprising:

a headset adapted so as to be worn on the head of the user (figure 1, headset 100; paragraph 0013);

a video camera mounted on the headset and positioned so as to capture a frontal view of the mouth of a user (figure 2; lip position sensor device 114 contains imaging device 126; paragraphs 0017 and 0018);

a microphone mounted on the headset and positioned so as to detect the speech of the user (figure 2; microphone 110 figure 0015);

a communication device transmitting the output of the video camera and the output of the microphone to a computer (figure 2, transceiver 116; paragraph 0015);

a speaker for transmitting sound to the user. the speaker positioned in proximity to the ear of the user (figure 2, earphone 124, paragraph 0015);

a communication path from the computer to the speaker (figure 2, transceiver 116; paragraph 0015 receives audio signals);

wherein the communication device for communicating the output of the microphone to the computer and communication path from the computer to the speaker are used in combination to perform conventional telephony wherein the computer communicates with telephony interfaces (Figure 4; use of headset in VOIP communication system; paragraphs 0032-0038).

Gordos does not specifically teach an illumination source mounted on the headset for illuminating the mouth of the user, wherein the illumination source is periodically energized.

In the same field of headsets with optical sensors, Marshall teaches an illumination source mounted on the headset for illuminating the mouth of the user (figure 2, LED 200; column 4 line 47-49.), and

wherein the illumination source is periodically energized (Marshall's Col. 4, lines 60-63, either the battery operated light emitting diode arrangement or the pulsating energy source energized light emitting diode may be used in the Fig. 1 and Fig. 2 embodiments of the present invention).

Therefore it would have been obvious to one of ordinary skill in the art at the time of the invention to combine the LED light of Marshall with the headset system of Gordos

in order to allow for headset to be useful in low-light condition in which the camera may not function alone.

Gordos and Marshall do not specifically mention the illumination source being periodically energized by a pulse generator having a pulsed output, wherein a period of the pulsed output and a pulse width of the pulsed output are independently controlled.

However, Rubis teaches a pulse generator 47 having an adjustable period, which is the sampling period T. The output of pulse generator 47 is a pulse waveform having the period T (Col. 3, lines 25-27). Rubis also teaches a pulse stretcher 49 connected to receive the output of the pulse generator 47, and is adjusted to stretch the width of the pulse generated waveform to a value (Col. 3, lines 38-41).

It would have been obvious to one having ordinary skill in the art at the time the invention was made to have used the feature of an independently controlled period of a pulse output and pulse width of pulsed output as taught by Rubis for the apparatus of Gordos and Marshall, because Rubis provides a pulse output amplifier with an adjustable period and adjustable pulse width sampling time [...] The sampling period and sampling time is made adjustable for use with various kind of electronic or electromechanical systems where the sampling period or sampling time may be made necessarily short or long in accordance with utilization needs of the device (Col. 2, lines 10-18).

4. Consider claim 2, Gordos teaches the apparatus of claim 1 wherein the video camera is a black and white CMOS type camera (imaging device can be black and white CMOS; paragraph 0018).

5. Consider claim 3, Gordos teaches the apparatus of claim 1 wherein the video camera is a color CMOS type camera (imaging device can be black and white CMOS; paragraph 0018).

6. Consider claim 6, Gordos teaches the apparatus of claim 1, but does not specifically teach wherein the video camera is positioned so as to capture a frontal view of the mouth of the user (figure 3; described column 0024) but does not specifically teach that the camera is positioned substantially on the center line of the mouth.

However Marshall suggests the camera is positioned substantially on the center line of the mouth (figure 3 shows position of camera in reference to user.).

Therefore it would have been obvious to position the camera as taught by Marshall in the system of Gordos as this is a matter of design choice: using a camera to the side with an optical fiber to the center and placing the camera in the center produces substantially the same predictable results.

7. Consider claim 14, Marshall teaches the apparatus of claim 1 wherein the illumination source is continuously energized (Marshall's Col. 4, lines 60-63, either the battery operated light emitting diode arrangement or the pulsating energy source

energized light emitting diode may be used in the Fig. 1 and Fig. 2 embodiments of the present invention).

8. Consider claim 18, Marshall teaches the apparatus according to claim 1, wherein the headset includes a boom supporting the video camera and illumination source so as to capture the frontal view of a mouth (Marshall's Fig. 3 shows the headset with a boom attached to it holding the photo/thermal detector(s) and LED).

9. Consider claim 19, Marshall teaches the apparatus according to claim 18, wherein the boom supports the microphone in the vicinity of the mouth (Marshall's Fig. 3 shows the headset with the microphone attached to the boom and near the mouth).

10. Consider claim 21, Gordos teaches the apparatus of claim 1 wherein the communication device includes a radio frequency transmitter receiving the video output of the video camera and the audio output of the microphone (Fig 2, transceiver 116; paragraph 0015) and a corresponding receiver adapted to provide the video and audio to the computer (Fig 2, transceiver 106; paragraph 0015).

11. Consider claim 22, Gordos and Marshall teach the apparatus according to claim 1, wherein the communication device is cabling (Marshall's Fig. 1 and Col. 3, lines 48-51, all of these energy transducers provide electrical signals to an analog signal processing apparatus 106 by way of the multiple channeled flexible tether cord 118).

12. Consider claim 26, Gordos teaches the apparatus of claim 1 wherein the computer is adapted to perform telephony functions over the internet (Figure 4; use of headset in VOIP communication system; paragraphs 0032-0038).

13. Consider claim 27, Gordos teaches the apparatus of claim 1 further comprising:

a wireless telephony transceiver connected to the speaker and the microphone to provide wireless telephony functions (figure 2, transceiver 116; paragraph 0015, used in VOIP communication system; paragraphs 0032-0038. Therefore the transceivers are providing wireless telephony).

14. Consider claim 29, Gordos teaches the apparatus of claim 1 further comprising a fiber optic cable providing an optical image of the frontal view of the mouth to the video camera (figure 3; optical fiber 140, described column 0024).

15. Consider claim 30, Gordos teaches the apparatus of claim 1 further comprising a tube acoustically coupled to the microphone so as to provide speech of the user to the microphone (figure 2, acoustic tube 144; paragraph 0024).

16. Claims 4 and 5 are rejected under 35 U.S.C. 103(a) as being unpatentable over Gordos in view of Marshall in view of Rubis as applied to claim 1 above, and further in view of Cofer (US PAP 2002/0061134).

17. Consider claim 4, Gordos, Marshall, and Rubis teach the apparatus according to claim 1, but does not specifically mention the video camera being a black and white CCD type camera.

However, Cofer teaches an image capturing device, preferably a standard black and white CCD video camera 810 (from Fig. 18) operating at thirty frames per second, [and wherein the] use of a color or CMOS-based camera is also contemplated (Paragraph 0103]).

Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to have used the feature of a black and white CCD type camera as taught by Cofer for the apparatus of Gordos and Marshall and Rubis, because Cofer provides a visual object detection system that uses one or more images from a video camera, digital camera, etc., to provide access and/or presence monitoring of an area of interest (paragraph [0008]).

18. Consider claim 5, Gordos and Marshall and Rubis teach the apparatus according to claim 1, but they do not specifically mention the video camera being a color CCD type camera.

However, Cofer teaches an image capturing device, preferably a standard black and white CCD video camera 810 (from Fig. 18) operating at thirty frames per second, [and wherein the] use of a color or CMOS-based camera is also contemplated (Paragraph 0103]).

Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to have used the feature of a color CCD type camera as taught by Cofer the apparatus of Gordos and Marshall and Rubis, because Cofer provides a visual object detection system that uses one or more images from a video camera, digital camera, etc., to provide access and/or presence monitoring of an area of interest (Paragraph [0008]).

19. Claims 7 and 30 are rejected under 35 U.S.C. 103(a) as being unpatentable over Gordos in view of Marshall and Rubis as applied to claim 1 above, and further in view of Lahr (US PAP 2002/0194005).

20. Consider claim 7, Gordos and Marshall and Rubis teach the apparatus according to claim 1, but they do not specifically mention the video camera positioned so as to capture a frontal view of the mouth of the user and is positioned to the side of the center line of the mouth.

However, Lahr teaches a first camera pointing toward the lips, mounted at a nearly central location on the side of the pivoting bail band closest to the lips so as to provide a frontal lip camera function (Paragraph [0023] and Fig. 6b).

It would have been obvious to one having ordinary skill in the art at the time the invention was made to have used the feature of a video camera positioned to the side of the center line of the mouth as taught by Lahr for the apparatus of Gordos and Marshall and Rubis, because Lahr provides a head-worn, tri-modal device for increasing

transcription accuracy in a voice recognition process and/or for processing unvocalized speech (Paragraph [0002]). Lahr also provides that a form of machine lip reading using camera data take place to augment the analog voice recognition processing. The data obtained from the machine lip reading would serve as additional input "decision base" channels to aid the algorithmic processors to convert the spoken speech into written words (Paragraph [0095]). The actual lip reading would utilize one or more cameras mounted adjacent to the speaker's lips. As shown in Fig. 6 and 7, three cameras may be used (Paragraph [0096]).

21. Consider claim 30, Gordos and Marshall and Rubis teach the apparatus according to claim 1, but they do not specifically mention the illumination source including a fiber optic cable to illuminate the mouth of the user.

However, Lahr teaches that with modern optical processors, it is even possible to utilize fiber cables that were not collated in their manufacture (as in illumination fiber cables) by "collating" the output of each fiber by a new data address (Paragraph [0091]).

It would have been obvious to one having ordinary skill in the art at the time the invention was made to have used the feature of a fiber optic cable providing an optical image of the frontal view of the mouth to the video camera as taught by Lahr for the apparatus of Gordos and Marshall and Rubis, because Lahr provides a head-worn, tri-modal device for increasing transcription accuracy in a voice recognition

22. Claim 8 is rejected under 35 U.S.C. 103(a) as being unpatentable over Gordos in view of Marshall and Rubis as applied to claim 1 above, and further in view of Harman (US Patent 6,473,115).

23. Consider claim 8, Gordos and Marshall and Rubis the apparatus according to claim 1, but they do not specifically mention the apparatus further comprising an optical filter limiting light entering the video camera to a band of infrared wavelengths.

However, Harman teaches a video camera used in the tracking means (2), that may be a CCD or vidicon type, the lens of which is fitted with an infrared bandpass filter (Col. 5, lines 38-39, and tracking means (2)from Figs. la & lb).

It would have been obvious to one having ordinary skill in the art at the time the invention was made to have used the feature of a video camera with an infrared filter as taught by Harman for the apparatus of Gordos and Marshall and Rubis, because Harman provides a multiple viewer image viewing system capable of providing a plurality of images to viewers and/or a three dimensional (3D) visual effect in a viewed image (Col. 1, lines 9-12).

24. Claims 9 and 20 are rejected under 35 U.S.C. 103(a) as being unpatentable over Gordos in view of Marshall and Rubis as applied to claim 1 above, and further in view of Paterson (US Patent 5,794,163).

25. Consider claim 9, Gordos and Marshall and Rubis teach the apparatus of claim 1, but does not specifically teach wherein the microphone is of the noise reduction type.

In the same field of speech headsets Paterson teaches wherein the microphone is of the noise reduction type (Paterson's Col. 8, lines 45-48 and Fig. 2, also Col. 8, lines 55-63).

It would have been obvious to one having ordinary skill in the art at the time the invention was made to have used the feature of a microphone of noise reduction type as taught by Paterson for the apparatus of Gordos and Marshall and Rubis, because Paterson provides a variety of circuit elements in both wireless telephone 101 and in headset 102 to suppress noise caused by the TDD/TDMA RF environment (Col. 7 line 67 to Col. 8 line 3).

26. Consider claim 20, Gordos and Marshall and Rubis teach the apparatus of claim 1 but does not specifically teach further comprising an amplifier coupled to the microphone.

In the same field of speech headsets, Paterson teaches an amplifier coupled to the microphone (Paterson's Col. 8, lines 26-27).

It would have been obvious to one having ordinary skill in the art at the time the invention was made to have used the feature of an amplifier coupled to a microphone as taught by Paterson for Gordos, Marshall, and Rubis, because Paterson provides a headset for hands-free wireless telephone, where the headset includes an earphone

capsule (Col. 8, lines 13-14), and wherein the earphone capsule includes an amplifying circuitry for amplifying the weak signal from the microphone (Col. 8, lines 26-27).

27. Claims 10-13 are rejected under 35 U.S.C. 103(a) as being unpatentable over Gordos in view of Marshall and Rubis as applied to claim 1 above, and further in view of Jones (US PAP 2005/0178841).

28. Consider claim 10, Gordos and Marshall and Rubis teach the apparatus according to claim 1, but they do not specifically mention the illumination source including a plurality of broadband light emitters.

However, Jones teaches a light source 10 that provides optical excitation for the mark (targeted object), which may consist of a pulsed Xe strobe or flashlamp, a broadband source such as a halogen lamp or incandescent, a chopped broadband or discrete source such as a laser, LED or super- luminescent LED, a time-modulated broadband source or discrete source, etc. The source can consist of one or more of these optical sources; for example, it might incorporate several narrow- band LEDs to excite a variety of luminescent compounds (Paragraph [0061]).

Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to have used the feature of an illumination source including a plurality of broadband light emitters as taught by Jones for the apparatus of Gordos and Marshall and Rubis, because Jones provides a method and system whereby products or documents can be identified based on the recording of a

luminescent image. The image consists of a discrete luminescence spectrum and a well defined luminescence decay time. Using a pulsed source for photoexcitation, luminescence intensities are recorded as a function of time following initiating pulses of light. Wavelength and time resolution of luminescence signals produces a unique signature that can be identified with a particular product or document (Paragraph [0048]).

29. Consider claim 11, Jones teaches the apparatus according to claim 10, further comprising an optical filter limiting light emitted from said broadband light emitters to a band of infrared wavelengths (Jones's emission filter of Fig. 11 and paragraph [0067], The Emission Filter 6 shapes the optical emission spectrum of the excited Mark (targeted object). It can consist of a grating, a dielectric filter or stack, a short-pass filter, a band- pass filter, a line filter to filter out ambient light, a glass filter, or any other optical spectrum-shaping element. The Emission Filter may incorporate several of these filters, for example in a filter wheel The Emission Filter may pass spectral power in the emission wavelength bands of the Mark luminescence. The Emission Filter may pass wavelengths in some subset(s) of the UV, visible, and infrared portions of the spectrum).

It would have been obvious to one having ordinary skill in the art at the time the invention was made to have used the feature of an optical filter limiting light emitted from said broadband light emitters to a band of infrared wavelengths as taught by Jones for the apparatus of Gordos and Marshall and Rubis, because Jones provides a method

and system whereby products or documents can be identified based on the recording of a luminescent image. The image consists of a discrete luminescence spectrum and a well defined luminescence decay time. Using a pulsed source for photoexcitation, luminescence intensities are recorded as a function of time following initiating pulses of light. Wavelength and time resolution of luminescence signals produces a unique signature that can be identified with a particular product or document (Paragraph [0048]).

30. Consider claim 12, Gordos and Marshall and Rubis teach the apparatus according to claim 1, but they do not specifically mention the illumination source including a plurality of narrowband light emitters.

However, Jones teaches a light source 10 that provides optical excitation for the mark (targeted object), which may consist of a pulsed Xe strobe or flashlamp, a broadband source such as a halogen lamp or incandescent, a chopped broadband or discrete source such as a laser, LED or super- luminescent LED, a time-modulated broadband source or discrete source, etc. The source can consist of one or more of these optical sources; for example, it might incorporate several narrow- band LEDs to excite a variety of luminescent compounds (Paragraph [0061]).

Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to have used the feature of the illumination source including a plurality of narrowband light emitters as taught by Jones for the apparatus of Gordos and Marshall and Rubis, because Jones provides a method and system

whereby products or documents can be identified based on the recording of a luminescent image. The image consists of a discrete luminescence spectrum and a well defined luminescence decay time. Using a pulsed source for photoexcitation, luminescence intensities are recorded as a function of time following initiating pulses of light. Wavelength and time resolution of luminescence signals produces a unique signature that can be identified with a particular product or document (Paragraph [0048]).

31. Consider claim 13, Jones teaches the apparatus according to claim 12, further comprising an optical filter limiting light emitted from said narrowband light emitters to a band of infrared wavelengths (Jones's emission filter of Fig. 11 and paragraph [0067], The Emission Filter 6 shapes the optical emission spectrum of the excited Mark (targeted object). It can consist of a grating, a dielectric filter or stack, a short-pass filter, a band- pass filter, a line filter to filter out ambient light, a glass filter, or any other optical spectrum-shaping element. The Emission Filter may incorporate several of these filters, for example in a filter wheel The Emission Filter may pass spectral power in the emission wavelength bands of the Mark luminescence. The Emission Filter may pass wavelengths in some subset(s) of the UV, visible, and infrared portions of the spectrum).

It would have been obvious to one having ordinary skill in the art at the time the invention was made to have used the feature of an optical filter limiting light emitted from said narrowband light emitters to a band of infrared wavelengths as taught by

Jones for the apparatus of Gordos and Marshall and Rubis, because Jones provides a method and system whereby products or documents can be identified based on the recording of a luminescent image. The image consists of a discrete luminescence spectrum and a well defined luminescence decay time. Using a pulsed source for photoexcitation, luminescence intensities are recorded as a function of time following initiating pulses of light. Wavelength and time resolution of luminescence signals produces a unique signature that can be identified with a particular product or document (Paragraph [0048]).

32. Claim 16 is rejected under 35 U.S.C. 103(a) as being unpatentable over Gordos in view of Marshall and Rubis as applied to claim 1 above, and further in view of Tomioka (US Patent 6,803,947).

33. Consider claim 16, Gordos and Marshall teach the apparatus according to claim 15, but they do not specifically mention the illumination source being de-energized during retrace or blanking periods of the video camera.

However, Tomioka teaches a video camera and the process of acquisition of a still picture by the video camera (Col. 3, line 66), wherein during the acquisition preparations, the CCD driver 9 generates first and second readout signals (B1 and B2) in synchronization with alternate vertical synchronization signals (A), but the strobe lamp is turned off, the subject is not illuminated, substantially no charge accumulates in the sensor elements, and the output video signal (D) is black. The external device that

controls the strobe lamp drives the strobe timing signal high for a brief interval between two consecutive vertical synchronization signals (A), not overlapping either readout signal (B 1, B2). When strobe light goes high, accordingly, the strobe lamp generates a flash of light that illuminates the subject during the integration time of the sensor elements in the CCD image sensor2; that is, during the time in which the sensor elements accumulate charge. Light reflected from the subject is focused by the lens 1 onto the CCD image sensor2, producing photocharges in proportion to the incident light intensity (Fig. 4 and Col. 4, lines 6-23).

Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to have used the feature of de-energizing illumination source during retrace or blanking periods of the video camera as taught by Tomioka for the apparatus of Gordos and Marshall and Rubis, because Tomioka provides a video camera that generates a video signal by mixed-line-pair readout from a solid-state image sensor with a complementary color filter (Col. 1, lines 7-9). Also Tomioka provides a video camera that can take still pictures in color with full vertical resolution, equivalent to the pictures taken by an electronic still camera, and a method for obtaining full-resolution still pictures from a solid-state image sensor and signal processing circuits of the type normally used to generate color moving pictures with interlaced scanning (Col. 2, lines 43-50).

34. Claim 28 is rejected under 35 U.S.C. 103(a) as being unpatentable over Gordos in view of Marshall and Rubis as applied to claim 1 above, and further in view of Neal (US Patent 6,547,395).

35. Consider claim 28, Gordos and Marshall and Rubis teach the apparatus according to claim 1, but they do not specifically mention the illumination source being adjustable to shape a light output distribution to reduce exposure of eyes of the user to the light output.

However, Neal teach a system using a pulsed wavefront sensor to measure the human eye while reducing the total exposure by controlling the duty cycle of the pulsed light source (Fig. 4 and Col. 3, lines 51-54).

Therefore, It would have been obvious to one having ordinary skill in the art at the time the invention was made to have used the feature of adjustable illumination source as taught by Neal for the apparatus of Gordos and Marshall and Rubis, because Neil provides way to use pulsed wavefront sensors for applications in addition to measurement of pulsed lasers. In particular, [...] to using a pulsed wavefront sensor to measure moving elements, to simplify measurements involving moving parts, and to reduce exposure, particularly for use with biological systems (Col. 1, lines 27-33).

Conclusion

36. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP

§ 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to DOUGLAS C. GODBOLD whose telephone number is (571)270-1451. The examiner can normally be reached on Monday-Thursday 7:00am-4:30pm Friday 7:00am-3:30pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Patrick Edouard can be reached on (571) 272-7603. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

DCG
/Patrick N. Edouard/
Supervisory Patent Examiner, Art Unit 2626